FINAL REPORT

THE MONITORING AND MITIGATION OF IMPACTS TO PROTECTED SPECIES DURING DREDGING AT THE KINGS BAY NAVAL SUBMARINE CHANNEL

WINTER 2005

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All work will be performed under the following permits:
NOAA National Marine Fisheries Service Federal Endangered Species Permit # 1380
Florida Fish and Wildlife Conservation Commission Marine Turtle Permit #165 & 097
Florida Fish and Wildlife Conservation Commission Special Activities Permit #02R-713

INTRODUCTION

Coastwise Consulting, Incorporated (CCI) provided Bean Stuyvesant, L.L.C. with monitoring and mitigation of impacts to endangered and threatened species during the dredging operations at the Kings Bay Naval Submarine Channel during the winter of 2005, from 02/09/05 – 02/25/05 and from 03/05/05 – 03/15/05. The Bean Stuyvesant dredge *Stuyvesant* worked 12 days during the first period in February (the dredge was docked 02/21 – 02/24) and the Great Lakes Dredge & Dock dredge *Manhattan Island* was subcontracted during the period in March, after the *Stuyvesant* suffered mechanical problems. Two endangered species observers, approved by the National Marine Fisheries Service, lived aboard each dredge, monitoring impacts to endangered and protected species, particularly sea turtles and right whales. These observers provided this monitoring on a 24-hour basis.

METHODS

On each dredge, rigid turtle deflectors were installed on the dragheads before work began. All points of inflow were screened with cages designed to capture entrained sea turtles and their parts. These cages are constructed of steel bar-stock, welded in a grid pattern, with openings of approximately 4" x 4". Observers gain access through the top of these cages for the purposes of inspection.

Two observers, working in shifts, will cleaned and inspected this screening, around-the-clock, in order to document any evidence of turtle take. The observer on duty thoroughly cleaned and inspected all screening at the end of each load. Before cleaning and inspecting the screens, the observer checked the dragheads and turtle deflectors. Load sheets were completed at the end of each load cycle, detailing everything found in the screening or the dragheads, as well as the condition of the screens and the deflectors. Also recorded was the start, end and pump times for each load, the specific location of the dredging area, the type of material being dredged, weather, tide and water temperature data (surface and mid-depth), and any other pertinent information.

Observers maintained a bridge watch for protected species and kept logbook of all sightings of turtles and marine mammals, especially large whales. Coastwise contracted sea turtle observers with at-sea large whale identification experience, and given the efficiency of screening apparatus on the dredges, the observers had no problem checking screening and providing an effective bridge watch for marine mammals. The bridge watch noted date, time, location, species, number of animals, distance and bearing from dredge, direction of travel and any other information available on all sightings.

All right whale sightings were reported to the USN Whale Sighting Node, FACSFACJAX, from where they were relayed across the pager system that alerts military and merchant mariners to right whale locations. All right whale sightings within 15NM of the dredge site or disposal area necessitated that the dredge operate at speeds of 5 knots or less during nighttime or during periods of limited visibility for 24-hours proceeding the sighting. Sightings were summarized on the Daily Reports. Daily reports and Weekly Summaries were filed with Bean Stuyvesant.

No turtles were taken on this project. Had there been a documented take, the protocol is as follows: observers photograph and measure the samples involved. All turtles taken are sampled for genetic analyses. The protocol for biopsy sampling is attached as Appendix 1. Samples are then weighted and jettisoned at an offshore dredge disposal site, or in the case of beach restoration projects, samples are sent ashore to be handled by the local sea turtle stranding network. Injured but living turtles are turned over to the stranding network and transferred to a facility that can provide rehabilitation to injured turtles. Such turtles are secured in a cooler, or box, lined with moistened padding. Every effort is made to maintain a relatively constant temperature in the cooler during transport that approximates the columnar water temperature where the turtle was taken.

Typically, the dredging contractor, the USACE and Coastwise Consulting will be notified by telephone after any incident involving a sea turtle, or any other protected species. This notification is made within 2 hours. Incident reports are completed for every event, recording all details surrounding the event and a diagram is made of injuries sustained by each turtle sampled. Inquiries concerning incidents should be directed to Chris Slay, Coastwise Consulting, Inc. (706-543-6859 office; 706-540-6655).

RESULTS

The dredge *Stuyvesant* worked 12 days (02/09 – 02/20, 02/25) and the *Manhattan* worked 11 days (03/05/05 – 03/15/05) 26 days. A total of 80 loads were dug during this time (*Stuyvesant*, 39; *Manhattan*, 41). Water temperatures ranged from 51 to 61 over the course of the project. No sign of impacts to sea turtles was documented during the work at the Kings Bay Naval Submarine Channel.

Results of the bridge-watch included daily sightings of bottlenose dolphins *(Tursiops truncatus)*. More importantly, there were 11 sightings of northern right whales *(Eubalaena glacialis)*: 10 sightings on 6 days from the *Stuyvesant* and 1 sighting from the *Manhattan Island*.

02/13/05, 1045 hours	2 *E. glacialis*,	2 adults/juv.	near channel (30° 42.6 x 081° 18.9)
02/14/05, 1036 hours	2 *E. glacialis*,	mother/calf	near channel (30° 42.6 x 081° 22.8)*++
02/14/05, 1530 hours	2 *E. glacialis*,	mother/calf	near channel (30° 42.6 x 081° 22.3)*
02/14/05, 1720 hours	2 *E. glacialis*,	mother/calf	near channel (30° 42.7 x 081° 20.8)*
02/16/05, 0955 hours	2 *E. glacialis*,	mother/calf	near channel (30° 42.7 x 081° 21.4)
02/17/05, 1135 hours	2 *E. glacialis*,	mother/calf	transit zone (30° 39.7 x 081° 16.8)
02/19/05, 0745 hours	1 *E. glacialis*,	1 adult/juv.	transit zone (30° 39.7 x 081° 17.5)++
02/19/05, 1104 hours	2 *E. glacialis*,	mother/calf	near channel (30° 42.8 x 081° 19.9)
02/19/05, 1250 hours	2 *E. glacialis*,	2 adult/juv.	transit zone (30° 37.9 x 081° 17.3)
02/20/05, 0727 hours	2 *E. glacialis*,	2 adult/juv.	transit zone (30° 37.8 x 081° 18.5)
03/09/05, 1850 hours	1 *E. glacialis*,	1 adult	near channel (30° 42.4 x 081° 23.2)

* These sightings may have been the same pair of whales. If so, they were in and around the channel on this day for almost 7 hours.
++ Dredge changed course to avoid whale(s).

In addition to the 7 days whales were sighted from the dredges, whales were sighted within 15 nautical miles of the project area on 7 other days, necessitating dredge speeds of no more than 5 knots on a total of 14 days during the Kings Bay work. The dates aerial survey results slowed nighttime operation of the dredges are as follows:

02/10/05 *Stuyvesant*
02/11/05 *Stuyvesant*
02/12/05 *Stuyvesant*
02/18/05 *Stuyvesant*
03/05/05 *Stuyvesant*
03/07/05 *Manhattan Island*
03/13/05 *Manhattan Island*

DISCUSSION

Given the efficiency of screening on the dredges *Stuyvesant* and *Manhattan Island,* it is with confidence that we conclude that no sea turtles were harmed during this project. That there were 7 days when whales were sighted by observers on the dredges speaks to the importance of maintaining a diligent bridge watch in the right whale calving ground during the winter calving season. The captains and crews of both dredges helped keep a sharp look-out for whales and were extremely helpful when screening maintenance was required. The project superintendents were also quick to lend assistance and made sure that the observers had crewboat access and anything else they needed to do their jobs well. The cooperation of Bean Stuyvesant and Great Lakes is greatly appreciated and was a key to the success of the monitoring program on this project.

APPENDIX 1

PROTOCOL FOR COLLECTING TISSUE FROM DEAD TURTLES FOR GENETIC ANALYSIS

Method for Dead Turtles

<<<IT IS CRITICAL TO USE A NEW SCALPEL BLADE AND GLOVES FOR EACH TURTLE TO AVOID CROSS-CONTAMINATION OF SAMPLES>>>

1. Put on a new pair of latex gloves.
2. Use a new disposable scalpel to cut out an approx. 1 cm (1/2 in) cube (bigger is NOT better) piece of muscle. Easy access to muscle tissue is in the neck region or on the ventral side where the front flippers "insert" near the plastron. It does not matter what stage of decomposition the carcass is in.
3. Place the muscle sample on a hard uncontaminated surface (plastron will do) and make slices through the sample so the buffer solution will penetrate the tissue.
4. Put the sample into the plastic vial containing saturated NaCl with 20% DMSO *(SEE BELOW)
5. Use the pencil to write the stranding ID number (observer initials, year, month, day, turtle number by day), species, state and carapace length on the waterproof paper label and place it in the vial with the sample.
   EXAMPLE: For a 35.8 cm curved carapace length green turtle documented by Jane M. Doe on July 15, 2001 in Georgia, the label should read "JMD20010715-01, C. mydas, Georgia, CCL=35.8 cm". If this had been the third turtle Jane Doe responded to on July 15, 2001, it would be JMD20010715-03.
6. Label the outside of the vial with the same information (stranding ID number, species, state and carapace length) using the permanent marker.
7. Place clear scotch tape over the writing on the vial to protect it from being smeared or erased.
8. Wrap parafilm around the cap of the vial by stretching it as you wrap.
9. Place vial within whirlpak and close.
10. Dispose of the scalpel.
11. Note on the stranding form that a part was salvaged, indicating that a genetic sample was taken and specify the location on the turtle where the sample was obtained.
12. Submit the vial with the stranding report to your state coordinator. State coordinators will forward the reports and vials to NMFS for processing and archiving.

*The 20% DMSO buffer in the plastic vials is nontoxic and nonflammable. Handling the buffer without gloves may result in exposure to DMSO. This substance soaks into skin very rapidly and is commonly used to alleviate muscle aches. DMSO will produce a garlic/oyster taste in the mouth along with breath odor. The protocol requires that you WEAR gloves each time you collect a sample and handle the buffer vials.

The vials (both before and after samples are taken) should be stored at room temperature or cooler. If you don't mind the vials in the refrigerator, this will prolong the life of the sample. DO NOT store the vials where they will experience extreme heat (like in your car!) as this could cause the buffer to break down and not preserve the sample properly.

Questions:
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